Remarks

In the Office letter of June 16, 2010 claims 1-31 were rejected under 35 U.S.C. §112, first paragraph. Claim 1 (apparatus claim) has been rewritten as claim 32.

The issue involving new matter (SOP of each packet functioning as label for QoS has been removed) has been addressed. The rejection under 35 U.S.C. §112 was based upon claims that did not seem enabled by the specification.

Former apparatus claim 1 (now claim 32) has been amended by the removal of the sentence "such that the state of polarization of each complete packet functions as a label indicating a QoS value for that packet" to address the label issue. To limit present claim 32 further two transmission options are presented in dependent claimes 33 and 34. They are described in paragraph [0078], and partly in paragraph [0048] lines 2-7. In addition, former claim 4 has been incorporated in present claim 32 to limit the claim even more.

Regarding method claim 18, the claim has been amended by the insertion of two transmission options.

Claim 7 has been amended by the insertion of the sentence "and a second electronic switching matrix is a packet switch" to clarify that the electronic switching matrix is a packet switch.

The sentence "adapted to separate packets of a first QoS class, payload of a second QoS class and header information of the second QoS" has been deleted from claim 7 since the separation is not performed by the optical matrix.

Claim 12 has been cancelled since limiting the claim to only 2 SOPs and inserting "representing QoS values" instead of "for signaling traffic" gives a scope that is already covered by claim 32.

Former claim 21 is cancelled.

Rejection Under 35 U.S.C. §103

Regarding the claims rejected under 35 U.S.C. §103, the Examiner argues that the combination (of Kodialam, Van Der Tool, and Handelman) gives the functionality that when the header and payload signals are made into polarized format, their QoS information also becomes tied to the polarization.

However, the combination of them gives the following result.

Kodialam teaches transmitting packets of different QoS, with different QoS labels, in an optical network.

Van Der Tol teaches a system where header and payload separation is performed optically assigning orthogonal SOP's to the header and the payload respectively.

Handelman discloses using orthogonal polarizations to merge two polarized packets into a single wavelength for achieving double bandwidth.

The combination of these publications gives the option of two different systems.

Kodialam together with Handelman gives a system where packets of different QoS bears a QoS label as described in Kodialam, i.e., the label is not given by the optical SOP of the packet. These packets are then multiplexed into two orthogonal states of polarization regardless of their QoS-value, because the purpose is to double the bandwidth. Furthermore, since the bandwidth of a QoS-class may vary, i.e., the required bandwidth for the BE-class may typically be higher than the bandwidth of the GS-class, the doubling of bandwidth is not achieved if the packets are assigned SOP according to their QoS-class. This type of assignment may result in much less than a doubling of the bandwidth since any leftover capacity in either the GS or the BE polarization channel may not be utilized by filling up the capacity with packets of a different QoS. In this case, it means filling up the capacity with BE packets in the GS channel or GS packets

in the BE channel. For achieving the doubling of the bandwidth, which is the purpose of Handelman, SOP may therefore not be applied for indicating the QoS of the packet.

Combining Kodialam together with Van Der Tool gives another system where packets labeled with a non-optical QoS value may utilize the SOP for separating the header and the payload of the packet. SOP is in this case not applied for QoS separation because it is already applied for header and payload separation. A mechanism for applying SOP for simultaneous separate header and payload, QoS or packet separation, is not described in these patents.

Finally, the combination of Kodialam together with Van Der Tool and further with Handelman would imply a system where packets are labeled with a embedded non-optical QoS value and where the header and payload is separated using the SOP. The use of Handelman, in such a system, would further imply that packets are transmitted simultaneously on two states of polarization with the purpose of achieving a doubling of the bandwidth. There would then be a conflict resulting in interference between the header of a packet and the payload of a different packet, transmitted in the orthogonal SOP to the header. In other words, if a payload is transmitted in SOP 1, its header transmitted in SOP 2 will interfere and have a conflict with the payloads transmitted in SOP 2.

Therefore, to conclude, Van Der Tool and Handelman cannot be combined for achieving a working system, and Kodialam and Handelman cannot be combined for achieving optical QoS separation through applying the SOP. Both the functionality and the optical behavior of the system described in the application is therefore different from the systems, described in each of these publications, as well as the systems achievable through combining the principles described in these publications.

Summary

Kodialam teaches in paragraphs 23, 25, and 28 a communication network arrangement for handling packets within optical or combined optical/electrical packet switched networks comprising at least an ingress node adapted to multiplex optical packets and an egress node adapted to demultiplex received optical packets, characterized in that the ingress node has means for transmitting packets of a first QoS class, and transmitting packets of a second QoS.

However, Kodialam does not teach transmitting different QoS signals on different states of polarization. Kodialam teaches only the transmission of packets of different QoS, with different QoS labels embedded in the packet, in an optical network.

Van Der Tol in column 6, lines 1-13, column 3, lines 12-20 and Figure 1 teaches a system where a transmitted packet's payload and header are multiplexed based orthogonal polarization and where the received packet's payload and header are multiplexed accordingly. Furthermore, the combination of Kodialam and Van Der Tol disclose using different polarizations for a packet headers and payloads.

However, Van Der Tol teaches only a system where header and payload separation is performed optically assigning orthogonal SOP's to the header and the payload respectively.

As discussed earlier, combining Kodialam together with Van Der Tool gives a system where packets labeled with a non-optical QoS value may utilize the SOP for separating the header and the payload of the packet. SOP in this case will not be applied for QoS separation because it is already applied for header and payload separation. A mechanism for applying SOP for simultaneous separate header and payload, QoS or packet separation, is not described in these two publications.

Handelman teaches using orthogonal polarization to merge two polarized packets into a single wavelength channel. One of the ordinary skill in the art at the time of the invention could have used orthogonal polarization to merge two polarized packets of the combination into a single wavelength channel, and each wavelength channel could have double bandwidth.

It is correct that Handleman discloses using orthogonal polarizations to merge two polarized packets into a single wavelength channel. However, the combination of Kodialam together with Handelman gives a system where packets of different QoS bears a QoS label as described in Kodialam, i.e., the label is not given by the optical SOP of the packet. These packets are then multiplexed into two orthogonal states of polarization regardless of their QoS-value, because the purpose is to double the bandwidth. Furthermore, since the bandwidth of a QoS-class may vary, i.e., the required bandwidth for the BE-class may typically be higher than the bandwidth of the GS-class, the doubling of bandwidth is not achieved if the packets are assigned SOP according to their QoS-class. This type of assignment may result in much less than a doubling of the bandwidth since any leftover capacity in either the GS or the BE polarization channel may not be utilized by filling up the capacity with packets of a BE or GS quality respectively. For achieving the doubling of the bandwidth, which is the purpose of Handelman, SOP may therefore not be applied for indicating the QoS of the packet.

Since Kodialam together with Handelman gives a system where packets cannot assign SOP according to their QoS-class and Kodialam together with Van Der Tool gives a system without QoS separation, because SOP is already applied for header and payload separation, the publications are viewed as non-applicable.

Conclusion

In the Office letter of June 16, 2010, the Examiner admits "they [Kodialam, Van Der Tol and Handelman] do not expressly teach a communication network arrangement characterized in the first QoS class represents GS-packets and the second QoS class represents BE-packets". Then, the Examiner asserts that the combination could be modified for the benefit of achieving Applicant's invention.

Applicant has claimed a specific technique for such modification that is non-obvious and should be patentable.

Applicant requests reconsideration of the claims in view of the amendments and remarks made herein. A Notice of Allowance is earnestly solicited.

The Examiner is requested to contact the undersigned attorney prior to an Office action at 408-297-9733 between 9:00 AM and 5:00 PM PST.

You are authorized to charge any fee deficiency or credit any overpayment to Deposit Account No. 19-0590.

CERTIFICATE OF TRANSMISSION

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing System in accordance with § 1.6(a)(4).

Signed: Sally Azevedo

Typed Name: Sally Azevedo

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Respectfully submitted,

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